

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P561163

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561163  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1STD-35-UNV-81-94-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

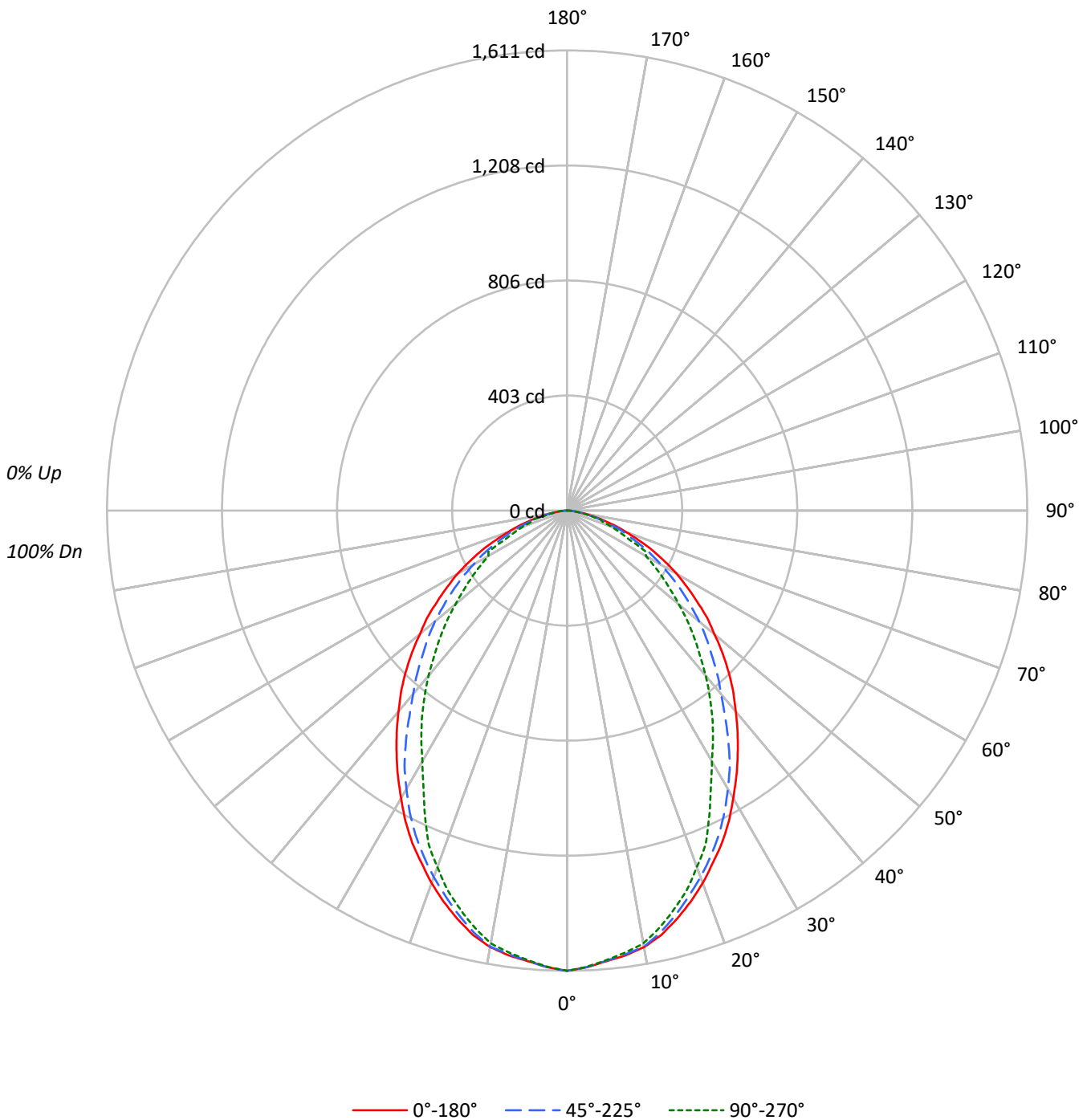
Lumens per Lamp: N/A  
Luminaire Lumens: 3163.0 lumens  
Efficiency: N/A  
Efficacy: 95.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4336	4336	4336
5°	4277	4272	4267
10°	4240	4235	4204
15°	4125	4084	4027
20°	3974	3910	3803
25°	3811	3727	3495
30°	3612	3496	3149
35°	3420	3231	2913
40°	3226	2944	2650
45°	3041	2722	2396
50°	2815	2527	2137
55°	2604	2289	1914
60°	2386	2045	1714
65°	2099	1791	1518
70°	1729	1568	1290
75°	1375	1201	1259
80°	924	866	809
85°	574	692	806

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3041 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.0	4.7
10°-20°	411.6	13.0
20°-30°	569.8	18.0
30°-40°	607.6	19.2
40°-50°	554.3	17.5
50°-60°	434.3	13.7
60°-70°	283.0	8.9
70°-80°	125.4	4.0
80°-90°	26.9	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1131.4	35.8
0°-40°	1739.0	55.0
0°-60°	2727.6	86.2
0°-90°	3163.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3163.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1611	1611	1611	1611	1611	
5°	1583	1581	1581	1580	1580	150
15°	1481	1481	1466	1451	1445	416
25°	1283	1276	1255	1211	1177	589
35°	1041	1034	984	909	887	651
45°	799	782	715	656	630	616
55°	555	538	488	430	408	498
65°	330	311	281	287	238	325
75°	132	123	116	110	121	142
85°	19	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1611.2	1611.2	1611.2	1611.2	1611.2
2.5°	1600.0	1600.0	1600.0	1598.2	1598.2
5°	1583.3	1581.4	1581.4	1579.5	1579.5
7.5°	1570.2	1568.3	1566.5	1564.6	1560.9
10°	1551.6	1551.6	1549.7	1540.4	1538.5
12.5°	1521.8	1519.9	1512.5	1499.4	1495.7
15°	1480.8	1480.8	1465.9	1451.0	1445.4
17.5°	1436.1	1434.2	1415.6	1400.7	1393.3
20°	1387.7	1383.9	1365.3	1341.1	1328.1
22.5°	1333.7	1333.7	1311.3	1279.6	1266.6
25°	1283.4	1275.9	1255.4	1210.7	1177.2
27.5°	1225.6	1214.4	1192.1	1128.8	1089.6
30°	1162.3	1156.7	1125.0	1043.1	1013.3
32.5°	1102.7	1093.4	1059.8	974.2	950.0
35°	1041.2	1033.8	983.5	909.0	886.6
37.5°	979.8	970.4	907.1	847.5	819.6
40°	918.3	907.1	838.2	784.2	754.4
42.5°	860.5	845.6	778.6	720.8	687.3
45°	799.1	782.3	715.3	655.7	629.6
47.5°	737.6	722.7	661.2	599.8	570.0
50°	672.4	659.4	603.5	542.0	510.4
52.5°	618.4	597.9	543.9	482.4	456.3
55°	555.1	538.3	488.0	430.3	407.9
57.5°	497.3	480.6	434.0	380.0	361.4
60°	443.3	419.1	380.0	333.4	318.5
62.5°	383.7	365.1	331.6	292.4	311.1
65°	329.7	311.1	281.3	286.8	238.4
67.5°	270.1	260.8	234.7	208.6	201.2
70°	219.8	208.6	199.3	171.4	163.9
72.5°	175.1	163.9	150.9	136.0	130.4
75°	132.2	122.9	115.5	109.9	121.1
77.5°	91.3	87.5	82.0	76.4	74.5
80°	59.6	57.7	55.9	54.0	52.2
82.5°	35.4	35.4	35.4	35.4	35.4
85°	18.6	20.5	22.4	24.2	26.1
87.5°	11.2	11.2	13.0	14.9	16.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)